Non-Art Objections and Rejections

Applicant requests reconsideration and withdrawal of non-art objections and rejections in view of the amendments to the claims.

Art Rejections

In view of the above amendments and the following remarks, Applicant requests reconsideration and withdrawal of the following art rejections:

1. Claims 1 – 5 under 35 USC 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sullivan '855.
2. Claims 1 – 6 under 35 U.S.C. 103(a) as obvious over Sullivan '855 in view of Sullivan '760.
3. Claims 1 – 9 under 35 U.S.C. 103(a) as obvious over Sullivan '855 in view of Bush '578 or Rees '134.

35 U.S.C. 102(e)

For a 35 U.S.C. 102(e) rejection to stand, all the limitations in the claim taken as a whole must be included or be inherent in a single reference. Such is not the case in this instance.

Sullivan '855

Sullivan '855 does not teach that aliphatic, mono-functional organic acids having fewer than 36 carbon atoms are included with the acrylate-ester-containing ionomeric resins. Nor does it teach that greater than 90% of the acid in the organic acid and acid copolymer are neutralized. Nor does it teach that a thermoplastic composition consisting essentially of such a blend of organic acid and acid copolymer wherein the acid in both the organic acid and the acid copolymer is so highly neutralized and the thermoplastic composition is still melt-processable. Thus, the 35 U.S.C. 102(e) rejection cannot stand.

35 U.S.C. 103(a)

For the 35 U.S.C. 103(a) rejections to stand, there must be some reason or motivation given in the prior art taken as a whole that would prompt someone to modify the teaching of the primary reference to arrive at the invention claimed as a whole. Such is not the case in Sullivan '855 alone, in Sullivan '855 in view of Sullivan '760 or in Sullivan '855 in view of Bush '578 or Rees '134.

Sullivan '855

Sullivan '855 requires more than 90% of one or more acrylate-ester-containing ionomeric resins in the cover of a golf ball. The desired property of the cover made with the ionomeric resins taught in Sullivan '855 is scuff resistance. Sullivan '855, among other deficiencies, does not teach 1) a blend of an aliphatic, mono-functional organic acid having fewer than 36 carbon atoms and an ethylene, C_{3-8} , -ethylenically unsaturated carboxylic acid copolymer and 2) neutralization of at least 90% of the acid in the organic acid and the acid in the acid copolymer. There is no suggestion or motivation in Sullivan '855 to modify the material taught in Sullivan '855 to overcome these deficiencies.

Other than through impermissible 20/20 hindsight, there is no basis to chose the metal stearates from the lengthy list of optional additives in Sullivan '855 and no basis to neutralize to the greater than 90%.

While one set of examples in Sullivan '855 includes acrylate-ester-containing ionomers with 95 and 100% neutralization, Sullivan '855 teaches percent neutralization in the range of 10 – 100% and the examples in Sullivan '855 include neutralizations over a wide range (as low as 28.5% in Experiment 2-13). Even if, arguendo, there were a suggestion to add organic acid to the ionomers of Sullivan '855, there is nothing that suggests doing so to highly neutralized versus lowly neutralized copolymers. But, applicant needs not get to the degree neutralization, since there is no motivation to add organic acid. None of the examples or the claims includes organic acids. Instead, metal stearates are merely part of a lengthy list of materials that may be included (that is are optional) provided they do not impair the properties achieved when they are excluded (that is they preferably excluded).

Sullivan '855 teaches that additional materials may be added as long as they "do not substantially reduce the playability properties of the ball" (col. 5, ll. 8 – 11) and, particularly as long as the "desired properties [scuff resistance] produced by the golf ball covers of the invention are not impaired" (col. 5, ll. 21 – 23). The additional materials may include dyes (ll. 12 – 14), pigments (ll. 14 – 15), UV stabilizers (l. 16), antioxidants (l. 16), antistatic agents (l. 16), stabilizers (ll. 16 – 17), softening agents (ll. 16 – 20), reinforcing materials (ll. 20 – 21), and nonionomeric materials (ll. 23 – 26). Metal stearates are included as an example of a softening agent (see ll. 19 – 20 which

provides that the softening agents include "plasticizers, metal stearates, processing acids (sic), etc.").

There is no statement that would suggest the softening agent be included in preference to any of the other materials, and further, there is no suggestion that would lead one skilled in the art to the organic acids of the present invention from the many softening agents known in the art (in this regard, applicant points the examiners attention to the "etc." in the list. Included in the "etc." is an almost endless list of potential softening agents). Furthermore, Sullivan '855, itself, appears to teach away from adding "softening" agents. Why would one skilled in the art, wanting to preserve the scuff resistance (the "desire property of the invention"), add a softening agent in view of the general knowledge that "hard" ionomers have improved scuff resistance? It is general knowledge that soft covers do not have much scuff resistance. Scuffing apparently is still a problem with covers made with hard/soft blends (see col. 1, ll. 57 – 60 of Sullivan '855, for example, where it is taught that covers made of hard ionomer do not scuff so much as those made of hard/soft blends).

Further, if sufficient performance is achieved without any additive, it cannot be obvious to add any one from the long list as it would at the most be expected to complicate production with the risk of hurting properties (Sullivan '855 itself expresses concern over additives substantially reducing properties).

Sullivan '855 in view of Sullivan '760

With Sullivan '855 teaching away from softening agents generally, there is nothing in Sullivan '760 that cures that deficiency. As pointed out in the office action, Sullivan '760 names salts of other fatty acids such as lauric acid as alternatives to metal stearates. Thus, if there is no motivation with respect to metal stearates as discussed above (and repeated here by reference), there can be no motivation with respect to other fatty acids based on Sullivan '760.

Sullivan '855 in view of Bush '578 or Rees '134

Sullivan '855 does not actually make an ionomer/metal stearate blend by combining pre-neutralized ionomer with pre-neutralized stearic acid. As discussed above, Sullivan '855 only allows for the possibility of doing so, without any motivation to make such a combination. There is equally as much possibility that the metal stearate (or any other additive for that matter) could be combined with a lowly-neutralized ionomer based on the teachings of Sullivan '855. Nevertheless, there is no suggestion

of a process for making a highly-neutralized, melt-processable copolymer by first blending the acid copolymer and the organic acid followed by neutralization to greater than 90%.

Indeed, example 64 of Rees '134 cited in the office action as basis for post-neutralization, adds zinc oxide to the ethylene methacrylic acid copolymer before it adds the stearic acid (see col. 15, l. 18, which states that the components are added in the order indicated). Bush '578 does teach the optional inclusion of a lubricant that can be an organic acid. As pointed out, example 1 does include 0.6 weight percent zinc stearate in the cation-supplying blend. While this does provide for concurrent addition of an extremely low level of stearate, it does not provide for neutralization to greater than 90% while still retaining melt-processability (see col. 4, ll. 37 – 38, which states that the process of Bush '578 is to neutralize 10 to 60% of the acid groups). One skilled in the art wanting to achieve melt-processability with a greater than 90% neutralized polymer would not look to the process of Bush '578 limited to neutralization levels so low.

Summary

In view of the foregoing, Applicant maintains that the non-art and art rejections have been overcome and that respectfully requests allowance of the claims as amended. If Applicant's attorney can assist in any way to move this case to early allowance, the examiner is invited to call him at the number indicated below.

Respectfully submitted,

Robert B. Stevenson

ROBERT B. STEVENSON
REGISTRATION NO. 26,039
TELEPHONE: (302) 992-6824
FACSIMILE: (302) 992-2953
FOR
CRAIG H. EVANS
ATTORNEY FOR APPLICANT
REGISTRATION NO. 31,825
TELEPHONE: (302) 992-3219
FACSIMILE: (302) 992-2953

Dated: January 29, 2002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In showing the changes, deleted material is shown in brackets, and inserted material is shown as underlined.

IN THE CLAIMS:

1 (amended). A thermoplastic composition that is melt-processable consisting essentially of (a) aliphatic, mono-functional organic acid(s) having fewer than 36 carbon atoms; and (b) ethylene, C_3 to C_8 α,β ethylenically unsaturated carboxylic acid copolymer(s) [and ionomer(s) thereof], wherein greater than 90% of all the acid of (a) and (b) is neutralized.

2. The composition of claim 1 wherein about 100% of the acid in (a) and (b) is neutralized.

3. The composition of claim 1 wherein an amount of cation source in excess of the amount required to neutralize 100% of the acid in (a) and (b) is used to neutralize the acid in (a) and (b).

4. The composition of claim 1 wherein the organic acid is one or more C_6 to C_{26} organic acids.

5. The composition of claim 4 wherein the organic acid is one or more C_6 to C_{18} organic acids.

6. The composition of claim 5 wherein the organic acid is one or more of C_6 to C_{12} organic acids,

7 (amended). A process to make a highly-neutralized, melt-processable [ionomer] ethylene copolymer comprising the steps of

(a) Melt-blending an ethylene α,β ethylenically unsaturated carboxylic acid copolymer or a melt-processable ionomer thereof with an organic acid or a salt of organic acid, and

(b) concurrently or subsequently adding sufficient cation source to neutralize more than 90% of all the acid moieties of the acid copolymer or ionomer thereof and the organic acid or salt thereof.

8. The process of claim 7 wherein about 100% of the acid moieties are neutralized.

9. The process of claim 7 wherein the amount of cation source is in excess of the amount that is required to neutralize all the acid moieties in the acid copolymer or ionomer thereof and the organic acid or salt thereof.